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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,333	10/06/2000	Hiroshi Kubo	1807-126A	3167

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ROTHWELL, FIGG, ERNST & MANBECK, P.C.  
1425 K STREET, N.W.  
SUITE 800  
WASHINGTON, DC 20005

EXAMINER
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TRINH, SONNY

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/685,333

Applicant(s)

KUBO, HIROSHI

Examiner

Sonny TRINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,3-8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) 2 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### CONTINUED EXAMINATION UNDER 37 CFR 1.114 AFTER FINAL REJECTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **02/21/06** has been entered.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1, 3-5, 8,10** are rejected under 35 U.S.C. 102(b) as being anticipated by Kay (hereinafter "Kay"; U.S. Patent number 5,542,107).

Regarding **claim 1**, with reference to figure 1, and description starting from column 3, line 23, Kay discloses a radio communication system (abstract) comprising:

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a plurality of transmitters each having at least one antenna for transmitting identical signals with the same frequency band (figure 1, antenna 24, 18, with signal originated from identical signal line 14, column 3) and

a receiver for receiving said signals (figure 2), wherein, said signals being transmitted from said at least one antenna of one transmitter of said plurality of transmitters is delayed an arbitral delay time so that output power which is different from at least one delay output in the other transmitters is set in each of said plurality of transmitters (figure 1, signal output from antenna 24 is delayed by delay element 20) .

Regarding **claims 3, 5**, Kay further discloses an equalizer for demodulating a signal transmitted from one antenna (figure 2, demodulator 34, equalizer 36).

Regarding **claim 4**, this claim is interpreted and rejected for the same reasons as given in the rejection of claim 1 above.

Regarding **claim 8**, Kay further discloses a transmitter (figure 1) characterized in that in the case where a plurality of transmitters transmit same signals with same frequency band, at least one antenna is provided, and an arbitrary delay (figure 1, delay 20) is given to said antenna so that an output power which is different from at least one delay output in the other transmitters is set (for further details, see column 3 line 23 to column 4 line 39).

Regarding **claim 10**, this claim is interpreted and rejected for the same reasons as given in the rejection of claim 8 above.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 6-7 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kay in view of Solondz (U.S. Patent Number 6,259,730 B1).

Regarding **claim 6 and 11**, Kay discloses the invention but does not explicitly disclose that said signals being supplied to said plurality of antennas are obtained by differently delaying modulated signals and carrying out amplitude regulation on the signals, and at least one of the delay amount and the value of amplitude regulation is set to different values in each of said antennas.

In an analogous art, Solondz teaches a transmit diversity and reception equalization for radio links (abstract). Solondz further teaches the different delay modules which obviously have different value of amplitude regulation (gain) (figure 6, column 4 lines 8-57).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to incorporate the different delay modules, as taught by Solondz, into the system of Kay in order to compensate for the known distortion in a manner which provides improved signal gain. The improved signal gain permits a reduction in transmit power and, accordingly, increased capacity of the base station.

Regarding **claim 7**, Kay further discloses the equalizer (figure 2).

***Allowable Subject Matter***

5. **Claims 2 and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claims 2 and 9**, the applied references fail to disclose or render obvious the claimed limitations specifically wherein when different delays as the arbitrary delays are given to a plurality of antennas, a combination of output powers which is different from corresponding delay outputs in the other transmitters is set.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonny TRINH whose telephone number is 571-272-7927. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward URBAN can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/20/06

  
**SONNY TRINH**  
**PRIMARY EXAMINER**